North Carolina
State Information Technology Plan

Using Information Technology to Improve Government Efficiency, Services and Accountability

Beverly Eaves Perdue
Governor

George Bakolia
Chief Information Officer

March 2009

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State of North Carolina
Office of Information Technology Services

Beverly Eaves Perdue
Governor

George Bakolia
State Chief Information Officer

March 3, 2009

The Honorable Marc Basnight
President Pro Tempore
North Carolina Senate
Raleigh, NC

The Honorable Joe Hackney
Speaker
North Carolina House of Representatives
Raleigh, NC

Dear Senator Basnight and Speaker Hackney:

I am pleased to submit the 2009-2011 State Information Technology Plan, which focuses on two primary themes.

The first theme is building upon past initiatives to achieve better planning, budgeting, and management of IT in state government. Those efforts include a statewide approach for making and managing IT investments to eliminate duplication and gain efficiencies, consolidation of IT infrastructure and increased use of shared services to improve cost-effectiveness, and better management of the State's IT assets to minimize expenditures and maximize value.

The second theme is the imperative to take advantage of the capabilities and power of IT to cut costs while increasing citizen services. This is especially important during the current economic crisis. The deep and potentially lengthy recession demands even more judicious and diligent management of IT investments and operations to increase efficiency, realize greater benefits and value from governmental programs, provide tighter linkage of IT expenditures with agency missions, and improve accountability for public funds.

Additional copies of the plan are available at http://www.scio.state.nc.us/.

I look forward to discussing this plan with you and other members of the General Assembly.

Sincerely,

George Bakolia

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Recommendations for Using Information Technology to Improve Government Efficiency, Services and Accountability

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Executive Summary

The N.C. General Assembly in 2004 directed the State Chief Information Officer (CIO) to develop a biennial State Information Technology Plan. The primary purpose was "to provide a systematic process for meeting the State's technology needs." This is the third plan written in response to that legislation.

The two previous plans contained several common threads:

- A statewide, or enterprise, approach to eliminate duplication and gain efficiencies.
- Consolidation of the IT infrastructure and increased use of shared services.
- Better planning, budgeting and management of the State's IT assets.

This plan continues those themes, which are not unique to North Carolina. Across the country, both the private and public sectors are utilizing common strategies to maximize their investment in critical IT resources. In some areas, such a project management, North Carolina is far ahead of other states. Other areas need more attention. Upgrading the state portal and wider use of e-government, for example, would make it easier for citizens to conduct business and interact with state agencies.

Major Accomplishments for 2007-09 Plan

The 2007-2009 Plan proposed five initiatives. All five were either accomplished or made substantial progress.

1. Western Data Center

A $32.5 million, state-of-the-art data center in Rutherford County was completed on time and within budget. The center gives the state the ability, for the first time, to back up "in-house" every critical application used by state government to deliver services to its citizens. It also provides additional computing capacity and flexibility. An aggressive program to ensure the center is fully utilized is one of the recommendations in this plan.

2. BEACON

The first component of BEACON, the replacement of the state's aging core business system, was successfully implemented on time and within budget. While the rollout of the Human Resources and Payroll component was largely successful, some of the 90,000 state employees who are now on the system had problems receiving their correct pay. Those issues are being addressed. Additional improvements are needed to make the system more usable and more stable before the state undertakes the next phase of the program.

With the implementation of the first component, employees are now able to manage their time sheets, payroll deductions and other human resources tasks directly and online.

Asset Management

The Office of Information Technology Services (ITS), led by the State CIO, is implementing a new Information Technology Asset Management (ITAM) system to improve the management of technology-related assets. The role of the system is to provide a standard suite of tools, databases, processes, and procedures that enable the strategic management of IT assets throughout their entire life cycles.

The system is being implemented in conjunction with the ongoing consolidation of the IT infrastructure, another recommendation of previous plans. The first two phases of the consolidation effort, covering nine executive branch agencies and several boards and commissions, are nearing completion. Planning has been completed for an additional five agencies in Phase III.

3. Shared Services

The development of new shared technical services as the needs were identified was the fourth initiative in the 2007-2009 Plan. Over the past two years, ITS has launched an Electronic Document Management service, which now manages five million documents, and moved aggressively to increase the utilization of data warehousing, software quality assurance and other shared services. In keeping with a legislative directive to pilot a statewide electronic document management system, ITS selected the Alcoholic Beverage Control Commission for the project.

Utilization of a single e-mail system continues to increase. By mid-2009, roughly two-thirds of executive branch employees will use an e-mail service offered by ITS. The State CIO has prepared a plan to transition all executive branch agencies to the system, as directed by the General Assembly in 2008.

4. IT Startup Fund

The 2007-2009 Plan proposed the creation of an IT startup fund to relieve initial users of shared services of the burden of paying one-time costs. The General Assembly appropriated $1.3 million in nonrecurring money for this purpose in 2007-2008 and $200,000 in recurring funds for 2008-2009. The money was used for SAS licenses that are being used by numerous state agencies, implementation of a new e-mail platform and a document management pilot program.

Recommendations for 2009-11

First Recommendation: Continue and expand upon initiatives begun as part of preceding IT plans, including:

- BEACON – Endorse and support the recommendations of the BEACON Steering Committee, including the sustaining and improving of the HR/Payroll component.

- Western Data Center (WDC) – Utilize the WDC to its potential, especially for improving the backup of data and recoverability of agency applications. A December 2008 report to the General Assembly on the status of disaster recovery and business continuity indicates that the state has over 1,000

applications critical to governmental operations; however, almost one-third of these are not adequately backed up, and only 50 percent of the critical applications have been tested for recoverability. An aggressive program to more fully utilize the WDC within an overall statewide approach for agency business continuity planning will allow agencies to plan better, test more, and ensure backup and recoverability for the State's mission-critical systems in a cost-effective manner.

- Consolidation of IT infrastructure – Implement Phase III of the consolidation of computing, storage, and network components (including PCs, servers, and networking and storage equipment, etc.) to continue to optimize IT spending, leverage staffing, decrease risks and enhance service levels.

- IT asset management – Continue the implementation of a comprehensive IT asset management program to inventory and track IT infrastructure components. Asset management is essential for managing hardware and software to maximize value and minimize costs over their life cycles.

- Shared services – Expand the shared services concept to include competency centers for addressing common technical needs. Competency centers providing the skills, tools, and products that could be used by agencies as common resources would reduce costs through economies of scale and elimination of duplication and leverage hard-to-find and expensive technical staff resources.

- Operational Excellence Program – Complete the implementation at ITS of the program to improve the management of technical operations and delivery of associated services, and expand it to agencies desiring to realize its many cost-saving and service level benefits. Benchmarking studies and metrics show that ITS has decreased work backlogs, improved response times to incidents, improved its success rates in changing technical configurations and increased efficiencies and staff productivity as a result of the program. Expanding the program to other state agencies would provide similar benefits at the agency level, allowing them to implement new services more quickly and minimize potential disruptions in operations.

- Standardization of personal computers and bulk purchasing – Continue the policy of purchasing desktop and laptop computers and printers in time-spaced intervals to maximize volumes and associated discounts. Since the latter part of 2004, 17 bulk purchases have saved over $34.5 million compared to the contract pricing. These cumulative savings exceed the $32.5 million cost to construct and outfit the Western Data Center.

Second Recommendation: Reassess the structure, presentation, capabilities, and management governance of the State's portal to enhance its value to the public, provide transparency of state government operations for improving services to constituents, and advance accountability to citizens for spending efficiency and program effectiveness. Many states have entered into partnerships for developing, managing, and funding their portals, and this may be a viable alternative for North Carolina.

Third Recommendation: Consider the assignment of a key business role in each agency to assess the use and value of IT in delivering services and improving the efficiencies and effectiveness of business operations. The current economic climate presents unprecedented challenges to governments from the lethal combination of revenue shortfalls, budget reductions and increasing benefit and service needs. Information technology, which sustains every business process and is embedded in every government program, can be a significant tool for addressing these dilemmas. However, this can be accomplished only if the powers and capabilities of IT are recognized and put to the best use for accomplishing business purposes and achieving the state's governmental priorities.

Fourth Recommendation: Create a structure for enterprise program management. Most state agencies cannot fully leverage the power of IT in highly specialized areas, such as data sharing and analytics. The use of these sophisticated systems has blossomed in recent years, often with the extensive use of contractors to operate them.

In addition to being complex, the use of these systems cuts across agencies and even branches of government.

The state should establish a structure for enterprise program management to better manage these systems.

The structure should include core competency centers that would house the expertise necessary to support common business needs. The concept is similar to shared services, such as e-mail and centralized data centers, which have been part of North Carolina's IT landscape for many years.

The recommendation is for the Office of the Governor, Office of State Budget and Management and State CIO, in collaboration with state agencies, to develop a plan for the creation of an enterprise program management structure.

Fifth Recommendation: Continue the effort to transition Executive Branch agencies to a single e-mail system to realize cost savings and service improvements. The status of this endeavor and the benefits are detailed in a November 2008 report to the General Assembly.

Sixth Recommendation: Authorize the State CIO, in conjunction with the Office of State Budget and Management and agency senior executives, to assess opportunities for the privatization of some IT services. The State should maintain responsibility for key IT programs and major business applications, and must ensure accountability, but should pursue public-private partnerships where they would provide value to the taxpayers of North Carolina.

Additional detail

Appendices beginning on Page 22 provide additional information about IT challenges facing today's leaders, a framework for better aligning IT and business requirements, and competencies needed to assess and prioritize IT needs.

The appendices also include a summary of major IT projects, as directed by law.

Context, Purpose, and Background

Context

Like its counterparts in both the public and private sectors, state government is in a challenging and depressed economic environment of historical proportions. The national and world economies are in flux, the current prognosis is inauspicious, and the future is uncertain. As a result, revenue collections are declining and budget cuts are being implemented while demands for state services are expanding, especially in areas directly impacted by the economy, such as public welfare and health and unemployment benefits.

The management of serious and possibly more severe future budget deficits is a priority, and primary attention is focused on opportunities for cost cutting, increasing efficiencies in business operations, and enhancing results of governmental programs. Consolidation and elimination of duplications in service delivery, streamlining of business processes, and enhancement of staff productivity are major considerations. Moreover, constituent demands remain relentless for more and better services, greater transparency in government operations, increased participation in democracy, and a government that is more cost-efficient, citizen-centric, performance-driven, and accountable for expenditures, results and value.

IT is an essential component of state government. It is embedded in virtually every business process, and it delivers the information necessary to transact business, conduct governmental programs, make strategic and operational decisions and formulate the myriad policies vital to competent governance. Because IT has become ever more important to the functioning of state government—and increasingly expensive, complex, and challenging to manage—proficient and effective IT planning and management are more critical than ever.

Strategic planning is about understanding where you have been, where you are and where you want to go. Strategy involves the setting of directions, approaches and paces of how you want to get there. Budgeting deals with prioritizing investments, and operational planning and management address the execution of the initiatives and projects to achieve the final destination.

Leadership is about ensuring the integrity of the cycle—that the right things are selected; that the fiscal, personnel, business, and technical resources are sufficient and appropriately allocated; and that the work is organized and managed for success. Leadership is not a spectator activity. Rather, it is a participatory, team-oriented, and contact sport that involves the development of the vision and ensuring that the right things are done, and done well.

Governance is the glue that binds business strategy setting, IT planning and operational execution, and business and IT leadership together into a cohesive and coherent whole. Governance responsibilities include developing strategy, determining priorities for investments, executing plans, managing risks, delivering value, and measuring performance. It consists of the leadership and organizational structures that ensure IT goals and activities sustain the overall business strategies and priorities of the organization. Governance is about business and IT employing a common language,

following a shared commitment, and pursuing a healthy relationship to address prioritized issues in a coordinated and synergistic manner.

Appendix A—Today's Challenges for IT—highlights key problems and circumstances facing IT in state government and summarizes implications and considerations.

Appendix B—Business-IT Governance Framework—summarizes the key components of governance.

Purpose

The purpose of this document is to identify and describe the recommendations of the State CIO for building upon and expanding the initiatives and projects carried out over the past half-decade for improving the management of IT. The recommendations continue an action-centered and results-focused approach for aligning IT strategies with governmental priorities in areas critical to service delivery, operational efficiency and accountability. In today's challenging and uncertain economic times, the judicious use and wise management of IT is becoming ever more critical in preserving and strengthening the faith, trust, and respect of the public for the integrity of government and its ability to deliver services to its citizens.

The harsh economic environment offers similar compelling challenges to both public and private sectors. Governments and industry must adjust to declining revenues, public/customer demands for greater convenience in conducting business transactions, greater efficiencies in operations and more stringent justifications for investments, including more intense scrutiny of expenditures and higher expectations for benefits/value to accrue. Accordingly, the underlying concepts, theories, and methodologies embedded in this plan are proven best practices for both government and private entities.

The state is facing a virulent recession and potentially long-term difficult economic conditions. This plan recognizes the responsibility of the state's leaders to better manage technical personnel, hardware and software resources, and associated costs and to leverage the power and capabilities of IT to maintain and even enhance services under severe budget constraints.

Background

Mandate for the Better Management of IT

Seminal legislation adopted in 2004 significantly increased the statewide authority of the State CIO for the better planning, budgeting, and management of IT. That legislation, combined with previous and subsequent statutes, prescribe additional responsibilities in crucial areas of IT management, including planning, budget review, project management, security, disaster recovery and purchasing. The following ten goals have been derived from these legislative mandates and are essential for more professional, competent, and forward-looking management of IT in state government.

- Develop IT plans and investments that are more synchronized with business strategies and initiatives.

- Foster better business-IT management and alignment through more effective governance.
- Improve processes for identifying and prioritizing investments.
- Plan and budget more effectively for future requirements while making the best use of IT personnel and capital resources.
- Increase the cost-effective purchasing of services and assets.
- Improve the performance of projects.
- Deliver the required levels of efficiency, availability, reliability, security and recoverability of IT operations and applications.
- Increase the capabilities for managing hardware, software, and applications assets over their useful lives.
- Implement appropriate and cost-effective security measures for protecting the privacy of individuals and the confidentiality of records.
- Enhance the ability to recover from natural and human-induced disasters and assist in the providing for continuity of operations.

Building on Past Accomplishments

This is the third State Information Technology Plan since passage of the 2004 legislation. The two previous plans contained several common threads and built upon concepts that have been part of IT governance in North Carolina for decades:

- **A statewide, or enterprise, approach to eliminate duplication and gain efficiencies.** The intent is to make investments and carry out governance processes that apply to multiple agencies (as statewide functions), rather than multiple agencies duplicating efforts. Examples include:

    - A statewide enterprise project management office and the use of a project portfolio management tool for project governance and approval at the project, agency and state levels.
    - A statewide purchasing office to assist in and oversee all IT procurements.
    - An award-winning enterprise architecture and the establishment of an architecture and engineering group to help agencies in technical areas of IT procurement and the design and implementation of applications.
    - The use of a statewide security and disaster recovery group to assist agencies in establishing policies and procedures and reviewing the agency capabilities in these areas.
    - The employment of data warehousing, software quality assurance and other centers of technical competencies to offer expensive software resources and scarce technical skills to agencies that could not otherwise afford them.

- **Consolidation of the IT infrastructure and increased use of shared services.** For computing (including PCs, servers, printers, etc.), storage devices, and networking equipment, the approach is to consolidate the management of these assets—not necessarily locate them in a single physical site—under the central ITS organization. This saves money through volume purchases and economies of scale, better aligns personnel, improves disaster recovery capabilities and service levels and enhances security. For shared services, such as electronic document management and payment card processing, the approach is to offer

common services that are shared by agencies and governmental programs to realize cost reductions through economies of scale and the leveraging of expensive and hard-to-find technical staff.

- **Better planning, budgeting and management of the State's IT assets.** The state has over a thousand applications and many thousands of hardware and software assets that represent millions of dollars in investments. The intent is to employ a life cycle management approach for maximizing value and minimizing cost and risk over the useful lives of these assets. The implementation of an applications portfolio management tool assists agencies in periodically inventorying and evaluating their applications individually and on a portfolio basis; determining necessary actions for remediation, renovation, consolidation or replacement; and developing long-range management plans for financing and undertaking the associated projects. The IT asset management tool inventories IT infrastructure components and equipment, analyzes status regarding warranties and contract obligations, provides relationship and dependency information, and assists in tracking and managing them over their life cycles (acquisition, deployment, maintenance, and retirement/disposal).

Recommendations for 2009-11

The recommendations summarized below are designed to accomplish two primary purposes:

- Continue and build upon the progress achieved from the implementation of investments and development of management processes enumerated in the past two IT plans. The intention has been to improve the management of IT and better harness its power to make state government more transparent, effective, economical and accountable. IT is embedded in all aspects of government and has the potential for enabling government to provide greater societal value and become more effective in the areas of health and welfare, citizen safety, public education, environmental protection and sustainability, economic development and constituent prosperity, and overall quality of life of residents.

- Respond to the global recession that is creating international, national, and local economic challenges. IT must make wiser and more prudent investments, implement them within more intense budget constraints, and become more efficient and effective in its own operations. Concurrently, IT also must enable agencies and governmental programs to absorb budget cuts and perform cost-saving initiatives while continuing ongoing efforts for improving services to citizens and expanding benefits to the public.

First Recommendation – Continue and expand upon the initiatives begun as part of preceding IT plans.

Major attention will focus on seven efforts for which significant progress has been made, but additional work is required. These are summarized below.

BEACON

BEACON is the name of the program charged with upgrading the state's business systems. It is the acronym for Building Enterprise Access for North Carolina's Core Operation Needs, and it is under the sponsorship of the Office of the State Controller (OSC), Information Technology Services (ITS), Office of State Budget and Management (OSBM), Office of State Personnel (OSP), and the Department of Transportation (DOT). It is a statewide collaborative effort designed to transform the way the state does business by modernizing applications and standardizing key business processes in human resources, payroll, data storage, budget and cash management, and accounting. The overall endeavor began in 2003 with two studies to assess the existing systems and develop a blueprint for selecting an improvement approach. The payroll/personnel project began in 2006 and involved the implementation of SAP's Enterprise Resource Planning (ERP) human resources (HR) software package. The executive branch agencies were converted in two phases, and that work was completed in mid-2008, with approximately 90,000 employees using the system.

Although the HR/payroll implementation was successful, the transition was not smooth for every state employee. Some employees did not receive their full pay and others were paid too much as a result of the conversion. Those issues have been corrected, but there is still room for improvement in usability, program functions and features, and operations stability. Those should be addressed before major succeeding projects in budgeting and accounting are considered. This 12- to 18-month endeavor will include the implementation of the e-recruitment component, allowing the state to receive maximum value from the package. As an adjunct activity, the staffing and organizational structure of the technical and business support for BEACON will be evaluated and redesigned as appropriate to best meet operational requirements and help desk needs.

Western Data Center (WDC)

In 2006, the General Assembly approved the second data center in Rutherford County in order to accomplish three primary objectives:

- Improve disaster recovery – the state has over 1,000 mission-critical applications, and a recent report to the General Assembly indicates that almost one-third of these are not adequately backed up.

- Build the state's IT infrastructure (especially mainframe and server computing and associated data storage and telecommunications capabilities) – because of increasing volumes of work from governmental programs and agency business processes, there is a need to expand operational capacity.

- Keep taxpayer dollars in the state – the center eliminated the need to pay for disaster recovery services that were performed out of state.

The building was completed in late 2007, and the past year has been spent on hiring staff and installing base networking and mainframe and server infrastructure. In mid-summer, a major disaster recovery test was conducted successfully with 15 participating agencies.

Although the WDC is gradually hosting additional applications and backup services are expanding for some major systems (such as e-procurement and BEACON), the facility

will not provide maximum value until it is fully utilized. Decisions must be made and provisions must be developed by the state's agencies to ensure that all critical applications are adequately backed up and disaster recovery processes are appropriately and frequently tested. While infrastructure is the responsibility of the State CIO, applications, their recoverability, and their support for business continuity of operations plans (COOPs) are the responsibilities of the agencies. Therefore, the ability of the WDC to meet its objectives and provide maximum value to the state is largely dependent on agency management. Moreover, the agencies now have a cost-effective means for taking advantage of a statewide approach for facilitating the planning, testing, and recoverability of their most important and vital systems.

Consolidation of IT Infrastructure

The scope of IT consolidation includes PCs (desktops, laptops, operating systems, and printers, etc.), servers (platforms, attached storage, and operating systems, etc.), network equipment (switches, routers, firewalls, etc.), service desk, and security. The goals of IT consolidation are:

- Strengthen agency focus on their core missions.
- Improve service delivery (security, availability, reliability, resiliency, and recoverability).
- Upgrade IT infrastructure to meet minimum standards in order to provide adequate and affordable service levels, minimize risks of failure, and provide common configurations that minimize support efforts and costs.
- Reduce statewide costs through economies of scale by leveraging purchasing volumes, specialized staffing, and tools over a larger customer base to minimize unit costs and reduce total overall expenses.

The keys to realizing cost containment and reduction and service benefits from infrastructure consolidation are to standardize the hardware/software environments—with products that work together (open systems) and are offered by multiple vendors (commodities)—and apply virtualization technologies and automation tools to manage configurations. Ideally, consolidation enables volume purchase discounts, realizes competitive pricing, simplifies operations and maximizes staff productivity. While past consolidation efforts have stressed cost avoidance and the containment of expenses, future endeavors should offer opportunities to realize cost reductions and greater overall savings.

In its most effective form, consolidation involves the combining and organizing of technical workloads to reduce the number of servers, storage devices, and network equipment while providing more and better services. This is made possible by employing a new, but rapidly maturing, technology called virtualization. Virtualization enables multiple applications to run on a single server—even allowing single servers to run multiple operating systems (thereby increasing the application density of servers). Similarly, virtualization increases the use of storage capacity and network throughput through better sharing of common resources.

In the first two phases of the program, the number of servers was reduced by 28 percent, from 289 to 209, through virtualization and consolidation. Forty-six antiquated servers were replaced and 125 moved to the data centers operated by ITS, improving security and reliability.

Consolidation does not reduce the number of desktops, laptops, and mobile devices, but it makes them easier to manage.

The combination of standardizing configurations, reducing the numbers of devices, and using virtualization technologies simplifies operations, improves the management of infrastructure, and provides economies of scale for cost savings and service level enhancements. The sharing of common architectures and equipment, operations management tools, and skill sets allows for reuse of uniform processes, best practices, and proven techniques; elimination of excess hardware and software with reductions in licensing costs and administrative burdens; and lessening of management complexities for improved operational performance. As a result, costs are better controlled, and the return on the value of infrastructure assets is maximized.

The status of IT consolidation (with approximate numbers) is highlighted in the table below.

Phase	No. Agencies	No. Locations	User Base	Total PCs	Total Servers	Total Switches
I	6 (small)	30	1,000	1,100	80	55
II	8 (medium and small)	240	4,200	4,200	270	510
III	5 (large and medium)	720	13,000	17,500	675	2100

Phase I agencies were consolidated at the end of 2006, and Phase II will be completed the first quarter 2009. Planning efforts for Phase III are on track for finishing early 2009.

Agencies in Phase III are: Department of Transportation, Department of Public Instruction, Office of State Auditor, Department of Labor, and the Department of Environment and Natural Resources. As indicated by the above table, Phase III consolidation involves a significantly larger effort than the first two phases—about three times the physical locations, users, etc.

A crucial lesson learned from Phases I and II is that a large portion of the hardware and software being used by the agencies for computing, business applications, data storage, and networking is out of date, out of warranty, functionally deficient, and in many cases, unreliable. Generally, this situation has been caused by funding shortfalls in annual IT equipment budgets. While the agencies have done well keeping the old equipment running, the cost of failures and downtime outweigh the cost of upkeep. Related to this, IT security running on this obsolete equipment also has not been kept current, allowing new vulnerabilities and risk of data loss to continue. This situation has required extra spending in Phases I and II to remediate defunct hardware and software.

Additional funding also will be required in Phase III to bring the infrastructure up to minimum standards for security and support. Given this technical situation, combined with the current economic downturn, uncertain business conditions and associated budget constraints, ITS, OSBM, and the agencies are developing appropriate plans to address these challenges. This revised approach features metered or phased-in spending that first responds to high business risks, while maintaining a focus on opportunities for potential immediate budget savings. Investments that address lower risks and longer-term efficiency improvement opportunities will occur later in Phase III, when budget conditions improve to make the upgrading of technology more affordable.

IT Asset Management (ITAM)

The IT asset management (ITAM) program has provided a standard suite of software tools, databases, processes, and procedures that enable the strategic management of IT infrastructure assets throughout their life cycles from purchase, deployment, maintenance/repair to retirement and disposal. Through a competitive bidding process, tools have been purchased and implemented to perform the functions of asset repository/inventory, hardware/software discovery, software patch management, software delivery, and software imaging.

ITAM efforts initially focused on the installation of supporting tools and taking inventory of infrastructure assets and technical configurations at ITS and the agencies participating in the infrastructure consolidation initiative. Benefits are beginning to be realized in the following areas and will accrue to greater extents as the program expands:

- Financial management and cost control – what assets are owned, what are their costs, who is the vendor, what contracts were they purchased under, when they were retired, and how were they disposed; where are there unnecessary duplications of hardware/software; what hardware/software is incurring license or other expenses and not being used; are there opportunities for standardizing hardware/software to realize larger volume purchase discounts and simplify operations; and where can we use the enterprise approach to replace multiple products doing the same thing or serving the same purpose with just one statewide approach/product?

- Software license management and control – what software packages is the state using, from whom were they purchased and under what contract; when are the contracts up for renewal; how many copies of the software does the state have running; who is not using them but paying for them and vice versa; and what is the state's compliance status with software license agreements?

- Desktop and server management – what are the make, model, age, location, etc., of each asset; what is the warranty status; what units do not comply with standard images; what systems are not compliant with the latest patch releases; what computing systems are using what operating systems and what versions; what software is located on each computing machine; what is the maintenance history of each asset; and what applications have been successfully deployed to users requiring them?

- Service management – is there a problem component and what agencies, programs, users, etc., are affected; if a change is required to a component, what other components are impacted and to what extent; if a migration to another level of operating or other system is required, what components are involved and how should the transition be carried out; if an application must be recovered for disaster recovery, what components are required to make this happen; what are the performance levels for availability and reliability; and how does the repository support ITIL-related processes?

- Planning and budgeting – what assets are becoming obsolete, or presenting unacceptable risks, or are no longer cost effective (needing refreshment or replacement); what contracts or software agreements need to be renegotiated and by whom; and what software products need to be upgraded, when will this be done, and at what cost?

Major future efforts will involve the expansion of the inventory to include the agencies participating in the upcoming phases of the infrastructure consolidation initiative and the development of the configuration management database (CMDB) for assisting in the implementation of ITIL processes at ITS and other agencies as part of the operations excellence program. Strictly speaking, ITAM contains static data for an asset, while the CMDB provides asset relationship and dependency information. Fortunately, the supporting tools for ITAM, the CMDB, and the service desk are from the same vendor and are fully integrated, thereby simplifying the coordination of efforts and providing for synergies and economies in implementations.

Shared Services

The enterprise approach for providing IT services that are common to multiple agencies and governmental programs is cost effective because it minimizes duplication of efforts among organizations, takes advantage of economies of scale by spreading the fixed costs over larger volumes to reduce unit costs for everyone, and efficiently leverages scarce and expensive staff resources by making them available to all participants—not just the largest or best financed. Moreover, the concentration of fiscal, technical, and staffing resources in a shared environment creates a critical mass of capabilities for decreasing risks, improving recoverability from human-induced or natural disasters, and enhancing service levels by applying best practices and uniform processes and employing standard infrastructure configurations.

Over the past two years, ITS has implemented or expanded shared services in several areas, including desktop and server management, electronic document management, software quality assurance, data warehousing, identity and authentication management, directory services, common payment services, and Exchange E-mail Services. These have been created and offered in response to agency desires for technical services that could be used as common resources for providing reliable and quality services at the most economical prices.

Future efforts should explore opportunities to create new and expand present competency centers that house the technical staff, software tools, and technologies necessary to support common business needs. The shared services concept not only creates the lowest costs, it also provides access to often expensive and complex

technical services that otherwise would not be available or affordable on an agency-by-agency or program-by-program basis.

Operational Excellence Program (OEP)

The Operational Excellence Program (OEP) is beginning its fourth year of operation at ITS and is undergoing its third implementation phase. Phases I and II covered incident, change, problem, service level, release, and configuration management. Phase III is the last phase of the ITS-focused effort, and it is addressing availability management, event management, service continuity management, continual services improvement, and service portfolio management. This phase should be finished in mid-2009. In late 2008, ITS completed a significant personnel restructuring effort that better aligns its service management organization to the installed ITIL processes and facilitates the shifting of ITS from a technology-centric organization to a customer- and process-centric one.

The OEP is a continuous service improvement program intended to develop ITS into the state's center of excellence for IT infrastructure service management. The OEP has the objective of assisting ITS and other state agencies in the implementation and operation of IT Infrastructure Library (ITIL)-based service management practices and processes to:

- Provide high-quality, reliable, and cost-effective services.
- Maintain and improve effective customer-IT organizational relationships.
- Adopt a continuous improvement approach to IT service quality.
- Ensure that IT services meet current and evolving business needs.

Benchmarking studies and metrics are showing that the OEP has been tremendously successful at ITS by decreasing work backlogs, improving response times to incidents, creating greater success rates in making changes to technical configurations, and increasing efficiencies and staff productivity. Based on past successes with the implementation of the OEP at ITS and the emerging interest in implementing service management processes based on the ITIL framework by other state agencies, ITS has adopted the following approach for expanding the OEP initiative:

- Move to an enterprise (statewide) model to take advantage of commonalities among agencies in service management processes and economies of scale in associated training and implementation services.
- Drive an IT-integrated framework that focuses on the customer.
- Act as a change agent that facilitates IT-business transformation.
- Enable enterprise services to obtain financial savings, reduce rework, and improve resource management and usage.
- Shift the focus from primarily ITS to proportionately more attention for agency implementations.

In mid-2008, as a result of competitive bidding processes, contracts for training and consulting vendors were consummated to assist in finishing the implementation of ITIL at ITS and continuing the implementations at early adopter agencies for the spreading of this service management framework on a statewide scale. The Departments of Transportation and Revenue are among the initial agencies participating in the enterprise-oriented OEP.

Bulk Purchasing

The objectives for the bulk purchase of desktops, laptops, and printers are to achieve cost savings from maximum volume discounts, realize efficiencies in the procurement process, and ensure acceptable quality of products at affordable prices. Since November 2004, 17 bulk purchases (about three or four purchases yearly) have been completed with a cumulative savings of $34.5 million over state contract prices. A key contributing factor is the agreement by agencies on uniform technical standards (that are updated for each purchase), thereby enabling common products to be used statewide. The approximate average historical numbers for bulk purchases are: participating agencies = 20, number of desktops = 2,350, number of laptops = 980, number of printers = 960, and savings = $2.0 million. With the potential for adding servers and tablet PCs to the covered products, more savings may be realized in future purchases.

Second Recommendation – Reassess the structure, presentation, capabilities, and management governance of the state's portal.

State government portals have evolved tremendously over the past few years. Today, the most effective and functional government portals are not only content-rich, but feature-rich, offering a wide range of self-service tasks and transactions, such as the ability to renew licenses, obtain birth and death certificates and file taxes online. Many people prefer to conduct business with the state online, at any time of the day, rather than stand in line at a government office during regular hours. Increasing the volume of online transactions saves time and taxpayer dollars. For example, Utah recently reduced state agencies to a four-day work week—without compromising service—because citizens and businesses can complete the most frequently requested tasks through the portal at times convenient to them.

The most successful portals utilize social networking and transparency features, which allow citizens to be more engaged with their government. Social networking features include podcasts, webcasts, YouTube video channels, Twitter blogs, subscription e-mail news updates, and the ability for citizens to access the portal using cell phones and other mobile devices. Transparency features allow citizens to follow and participate in public meetings, track government expenditures, and review contracts with state vendors. This allows them to be more involved in government decision-making.

Several entities assess state portals according to how well they serve citizens. Since 2004, North Carolina's portal has fallen from 10th to 22nd place, according to the Center for Digital Government's Digital States Survey. The 2008 Brookings Institution Report on E-Government places North Carolina at 29th place.

Among the top 10 portals in the 2008 Digital States Survey, half were designed and developed through a self-funding, public-private partnership. In fact, 22 states now outsource their portals using this method.

A self-funded model requires no additional tax dollars or appropriated funds. Instead, multiple revenue sources are identified and established to fund the portal initiative. The self-funded portal remains financially viable through fees charged for certain services, while most services remain free of charge. The fees are then reinvested to provide portal infrastructure and service enhancements.

To better serve its people and businesses, North Carolina's portal must provide more opportunities for citizen interaction. Unless dedicated appropriations are available from the General Assembly, outsourcing portal development through a self-funding, public-private partnership may be the best way to achieve this.

Third Recommendation – Assign a key business role in each agency to assess the use and value of IT in delivering governmental services and improving the efficiencies and effectiveness of business operations.

Even in the best of economic times, most favorable business environments and most auspicious political circumstances, both private entities and governmental organizations experience difficulties in recognizing and taking advantage of emerging technologies and using IT to its maximum potential for addressing business challenges. The severe economic downturn and its uncertain duration and magnitude exacerbate this problem and make the need to address it more critical. Organizational leadership and business management are decision-making endeavors. In favorable economic cycles, the margins for miscalculations may be larger, and the consequences for mistakes may be less serious. Contrarily, in economic recessions and financial crises, tolerances for inaccuracies are small and repercussions for errors can be devastating.

All budgetary (investment and spending) decisions are business decisions—even those made for IT projects and technical operations, as IT exists solely to enable business services and processes and support governmental program activities. Therefore, it is incumbent upon business leaders to make both business and IT budgetary decisions. Similar to business financial decisions, IT budgetary decisions require the answer to three questions: 1) for what purpose to spend (where to spend and what to spend on), 2) how much to spend, and 3) when to spend.

While the approach for answering these questions is the same regardless of the economic climate, the care and precision for making them may be influenced by the risk of errors and magnitude of the impact of mistakes. The methodology summarized below may assist in ensuring that the right amount of money is being allocated to the right IT activities and investments.

- Determine the relevance or importance of major business processes and governmental program functions to the missions and success of the agency.

- Assess the value IT is providing to these processes and functions and approximate the cost of IT to support them.

- Evaluate the potential for IT to improve the value it provides or the extent it supports these processes and functions and the associated costs. This review includes the identification of opportunities to use IT for dramatically improving the efficiency and effectiveness of business operations and the performance and outcomes of governmental programs.

This approach for evaluating the effectiveness of IT in meeting business needs recognizes that technology is constantly changing and continuously presenting new capabilities and ways for delivering innovative services, reengineering business processes, and revamping business models and practices. The intents are: 1) to use IT where it can be a cost-effective solution to business challenges, and 2) to use it in a manner that maximizes its contribution to the goals and strategies of the organization and the business processes it supports.

A beginning effort may be to perform research and gather an appropriate level of information on key relations. In particular, business missions, governmental priorities, and regulatory/statuary mandates may be linked to the business strategies and initiatives for achieving them. These, in turn, may be tied to the relevant IT investments and projects for enabling them. This work should create a line-of-sight view of the IT investment budget to its key business drivers. All things being equal, preferential IT investments would be those enabling higher priority business initiatives. In some cases, investments offering lower return and less value may receive more attention than they otherwise would deserve because they are prerequisites to succeeding projects with significant benefits or that support major governmental priorities.

Another potentially helpful relationship exercise is to connect essential agency business functions and governmental program activities to the major information items that are used by them, and in turn, link these to the applications that collect and provide the information and enable key workflows and related tasks and decision-making activities. A third level of dependencies is the tying of critical IT infrastructure assets to the business processes and program functions they support.

Through its management and review functions, the State CIO's Office has provided software tools and repositories to assist in evaluating the value of IT operations and IT projects to the agency and identifying areas for the better use of IT resources (fiscal, personnel, and capital) to meet agency business requirements. These include the applications and project portfolio management software tool (includes all applications and major investment projects for all agencies) and the IT asset management tool for inventorying infrastructure assets for ITS and the consolidated agencies.

Appendix C—Competencies for Assessing Value and Use of IT to Meet Business Needs—lists some competencies and skills for staff assigned this role.

Fourth Recommendation – Create a structure for enterprise program management.

Most state agencies are too small to afford the skill sets that are needed to fully leverage the power of IT in highly specialized areas. These include the SAS analytics software, Geographic Information Systems (GIS), and SAP, which provides core business systems such as human resources and payroll. The use of these sophisticated systems

has blossomed in recent years, often with the extensive use of contractors to operate them.

In addition to being complex, the use of these systems cuts across agencies and even branches of government. The executive, judicial and legislative branches all have an interest in using these sophisticated tools to perform better.

The state should establish a structure for enterprise program management to better manage these systems.

As part of enterprise program management, core competency centers would hire and develop the skilled workers who could help agencies utilize the full potential of complex IT to deliver services more efficiently and more effectively. The competency centers would house the expertise necessary to support common business needs. The concept is similar to shared services, such as e-mail and centralized data centers, which have been part of North Carolina's IT landscape for many years. Sharing services across agency lines and branches of government creates the lowest costs and provides access to often expensive and complex technical services that otherwise would not be available or affordable on an agency-by-agency or program-by-program basis.

Enterprise program management would be responsible for the day-to-day management of broad-based enterprise programs, such as the data integration efforts that are tied to BEACON and criminal information sharing, and Geographic Information Systems.

The recommendation is for the Office of the Governor, Office of State Budget and Management and State CIO, in collaboration with state agencies, to develop a plan for the creation of an enterprise program management structure.

Fifth Recommendation – Continue the effort to transition Executive Branch agencies to a single e-mail system.

Electronic mail is a mission-critical application in state government. State employees in the executive branch use e-mail to share documents and communicate with each other and with the public more than a million times a day. The ITS e-mail servers receive more than five million incoming messages daily and deliver 300,000 messages after spam and viruses are filtered out. Those numbers do not include the General Assembly, the judicial system or the university system.

State government has been moving toward a single e-mail system for years. ITS currently offers two systems: an older, functionally outdated and technically obsolete service called NCMAIL (Basic E-mail Service), and a modern service based on the Microsoft Exchange platform (Exchange E-mail Service). The intent is to convert the users on NCMAIL and the agency-based systems to the ITS Exchange E-mail Service.

The N.C. General Assembly, in Section 6.14 of S.L. 2008-107, directed the State CIO to develop a detailed plan to implement a single e-mail system for the executive branch by January 1, 2010. The status of this endeavor and the benefits are detailed in a November 2008 report to the General Assembly. The current status of e-mail systems in the executive branch is highlighted in the table below.

E-Mail System	No. Agencies	No. Users	Required Actions
ITS Exchange E-mail Service	18	12,000	None.
ITS NCMAIL service	5	25,000	Convert to ITS Exchange E-mail Service at a total agency cost of about $625,000. A plan is in place to convert these by July 1, 2009.
Agency-based	10	19,000	Convert to ITS Exchange E-mail Service at a total agency cost of about $480,000, and ITS additional server purchase cost of $206,000.

An analysis by the Office of Budget and Management in May 2008 identified several benefits from a single statewide e-mail system. A single system would enable agencies to devote their IT resources to their unique needs instead of basic infrastructure and make it easier to integrate web e-mail and calendar features. The analysis also found that a single e-mail system would save more than $7 million annually in improved productivity and cost savings by eliminating support for multiple e-mail systems.

State governments across the country have either moved to a single e-mail system, or are planning such a move. In a 2006 survey by the National Association of State Chief Information Officers, 72 percent of the 35 states responding reported that they were consolidating e-mail systems. Private industry addressed the consolidation of e-mail systems years ago, recognizing early the favorable returns of the effort from cost savings due to economies of scale and enhanced communications capabilities and improved service levels (higher availability, greater reliability, and better disaster recovery) from simplified supporting technical infrastructures, and the use of a minimum number of tools to optimize staffing knowledge and size.

Sixth Recommendation – Assess opportunities for the privatization of some IT services.

Like counterparts in both the public and private sectors, states must become more capable of balancing the often conflicting demands of providing better and more responsive services while reducing costs—doing more with less, especially in these troubling economic times that are creating tremendous cost pressures. This challenge requires not only more astute management but also innovative and far-sighted approaches. IT is not immune, but in fact, it must achieve this equilibrium for itself while enabling agency business areas and governmental programs to do likewise.

The privatization of some IT services, either through outright outsourcing or joint public/private partnerships, has been used by many governmental entities at all levels to

address the increasingly intense pressures for delivering new, enhanced, and more services to the public in the most economical way. Accordingly, the State CIO, in conjunction with the Office of State Budget and Management and agency senior executives, should be authorized to access opportunities for the privatization of some IT services.

Traditionally, organizations have outsourced technical and/or business services for a wide diversity of reasons, including cost reduction or expense predictability, efficiency gains or productivity improvements, access to unavailable skills, focus more directly on core business activities, support innovation in business processes, modernize capital and IT infrastructure and IT applications, and even support the transformation of business models. While cost containment and budgetary issues may be immediate concerns for state government, outsourcing can be used to address other challenges (or remove less critical work that may be absorbing dollars and time that should not be spent confronting them), including revenue maximization/generation, tax collection, fraud detection, cost recovery, program effectiveness and accountability, agency efficiency, and citizen satisfaction.

While privatization implies a loss of control, it is really about employing best practices in contract negotiation and vendor management with the specialized skills and economies of scale in vendor operations to achieve acceptable services at more affordable prices. The truth is there are some IT services vendors can do better and cheaper than the state can do for itself. For most situations, this economic reality is made possible by vendors leveraging hard-to-find skills, expensive tools, and large technical infrastructures over a huge customer base to reduce unit costs.

Successful privatization requires answering two primary questions: what services to consider, and how to structure and manage the contract. Regarding the first question, if possible, mission-critical items should be exempt from consideration. These may include networks and major business applications, such as those that could jeopardize public safety and welfare or expose risks to security, confidentiality, or privacy. As for the second question, contractual protection must ensure that agreed-to service levels are adequately defined, penalties and incentives are properly structured and enforced, and provisions exist to protect the state in event of vendor insolvency, abandonment, or cessation of operations. Moreover, the state must be able to easily change vendors or be in a position to again provide the services itself at the end of the contract.

Cost cutting, technology refresh, and applications modernization should not be the sole drivers of IT privatization. Rather, outsourcing strategies should be congruent with business goals, and consider the blending of business and IT services from an optimal composition of internal and external providers in the pursuit of business plans and objectives. Solely cost-focused outsourcing should be avoided, while business-outcome-oriented outsourcing should be pursued.

Outsourcing should be performed within a structured, strategic approach where true costs, benefits, risks, and opportunities are well researched, analyzed, and understood. Outsourcing has been more successful when there is adequate planning, well-conceived procurement, well-known expectations by all parties (in advance), and competency in contract governance and vendor management (i.e., assigned responsibility and enforced accountability). A continuously emerging critical success factor is the client (state) must thoroughly understand the service/function that is being privatized before outsourcing it

to a vendor. Also, it has been proven to be helpful if the service/function to be outsourced is well run before outsourcing, so that ‘clean up’ efforts by the vendor to make it acceptable to customers are minimized.

Appendices

Appendix A – Today's Challenges for IT

The public is demanding more from government. Technology has become so endemic and important to government that its management is recognized as a critical competency. Because IT permeates the inner workings of state government and sustains the operations of governmental programs, it can help the state deliver services and accomplish missions and responsibilities by addressing crucial business problems and opportunities and political imperatives.

The astute leveraging of technology is key to:

- providing better and more responsive services to citizens, businesses, and employees
- maximizing the results and performance of programs
- improving critical business processes and increasing productivity of the state's workforce
- building service-centered and customer-focused organizations
- responding quickly to changing governmental priorities
- managing risk, compliance and governance
- technically preparing the state and its agencies and programs for the future.

However, the deployment and management of technology must be performed within challenging environments characterized by turbulent and uncertain economic conditions, changing political agendas, demanding legislative mandates and governmental regulations, expanding expectations of constituents for greater responsibility and accountability for program performance, relentless focus by taxpayers on efficiency and cost-effectiveness, more constrained budgets and constantly evolving technologies.

Both private and public entities are facing generational shifts in technology, business/political pressures, funding obscurities, and IT skills at magnitudes and rates never before seen in the computer age. The scale of business expectations, economic uncertainties, technology complexities, and IT organizational challenges has placed an unprecedented need for rigorous and thorough (but flexible) planning and proficiently executed projects and well-managed operations.

Major challenges for IT leaders and their implications are highlighted below:

1. **Program areas are presenting urgent and continuously shifting demands for new, enhanced and more efficient, secure, and reliable services. As a result, IT must become more flexible and responsive in planning and execution.** More specifically, IT must position itself to enable and support the following governmental imperatives:

    - Become more citizen-driven – By better understanding citizens' needs, IT can improve service delivery, reduce costs, and enhance public satisfaction. Constituents' desires should be foremost in determining how services are designed, integrated, implemented, and operated. This means citizens must be involved in setting the performance targets for cost, quality, and timeliness of

services. Emerging technologies (such as Web 2.0 and social networking) should be utilized. E-government concepts, applications and tools may become more important in offering greater convenience, more functionality and better access for the public.

- Maximize the cost-effectiveness and performance of applications and infrastructure assets – The keys to success are: a) understanding the relationship among business processes, applications and infrastructure, as they are all intertwined; b) reducing the complexity and multiplicity of technologies used (i.e., standardize, consolidate, and simplify as much as possible); and c) consider service management implications (performance, availability/reliability, disaster recovery, and security) during design and development—not just at the point of transition to operations. The availability and quality of data should be expanded and improved to support more timely and complex policy formulation and decision making and provide better insight into program operations and public needs.
- Improve critical business processes and workflows – Since an agency is the sum of its business processes, each process must be as streamlined and efficient as possible in order to improve responsiveness and increase productivity. The idea is to minimize clumsy handoffs, errors, duplications, and bottlenecks. The increasing demands on and complexities of state government require that processes become more information-integrated, and end-to-end transactions for conducting business and providing services must be as friction-free, streamlined, efficient, and responsive as possible. Government must transform to a different way of working and managing by moving from a function-oriented to a process-centric mode of operation. Moreover, IT must enable the implementation of new business models and new service offerings.
- Enhance workforce effectiveness – Since government and processes are about people, employees must be as effective and productive as possible. Proficient data management is essential for providing the right information all of the time and in a useful, useable, and understandable manner, especially for decision making and policy formulation. Employees must be freed from their desks/workstations—technology must enable a virtual workforce that can provide information anywhere, anytime, and any place. It must enable a different way of working and offer far more flexibility in terms of where and how individual professionals do their jobs.
- Manage security – Business and IT should work together to determine how much security provides an acceptable level of risk for the cost.
- Link IT projects and investments to business missions, goals, and initiatives – IT should change its perspective from a cost center that provides basic business support to the role of strategic partner committed to enhancing the business, enabling innovation and growth, responding to key business drivers (such as a recessionary economic environment), and accomplishing the missions and duties of the organization. Attention should be focused on using technology to maximize the performance, results and outcomes of governmental programs.

2. **The increasing age and obsolescence of the state's applications assets may create unacceptable risks of failure, intolerable service levels, or excessive maintenance costs.** The need to modernize legacy applications is becoming more pervasive and acute. Some popular approaches include: a) the retirement and replacement of mainframe systems with custom off-the-shelf (COTS) packages using

modern technologies, languages, and operating systems; b) converting legacy applications to operate on distributed server-based platforms; or c) upgrading outdated technical components, such as database management software. This need to replace or modernize dated and risky applications is exacerbated by exploding business requirements that older applications cannot meet and staffing shortfalls created by the retirement of personnel with legacy skill sets.

State government is information-intensive, and outmoded and incompatible technologies are obstacles to being able to handle, share and act on data that is timely, accurate, complete and usable. Moreover, dollars and staff time spent maintaining outdated technologies and archaic applications could be spent better by realizing the business-enhancing and cost-reducing benefits of newer and emerging technologies and systems. While it may be an acceptable practice to keep old, but serviceable and functional, applications and infrastructure on life-support for some time, there is no excuse for not having a plan for potential alternatives to these dying assets.

3. **There is a shortfall in technology skills and an emerging crisis in the state's ability to attract and retain competent and experienced technical staff.** All components of the state's technology infrastructure and application portfolios should be managed, implemented, maintained, and operated by technology-skilled personnel. Shortages are appearing for both old (due to retirements) and new (due to competition from private industry) technologies. While this situation is presently being accommodated through the use of contractor staff and the increased pool of applicants due to current depressed economic conditions, a better and more cost-effective approach must be developed for the longer-term.

4. **The state's portfolios of technology assets (including technical infrastructure and application assets) are becoming more diverse and interrelated; therefore, the greater sizes and complexities are making them much more difficult to manage.** While each asset and each portfolio should be managed individually for its value and return, the total asset base should be managed as a collective whole to maximize the value. That is, to minimize complexities and manage interconnections among portfolios, plans must be comprehensive and integrated across all assets and portfolios, and decisions must take into account the whole inventory of assets and the movement of inventory to a desired condition based on maximizing total value while minimizing risks and cost.

   In regard to asset management, good practice is to inventory and continuously monitor the current and desired status, while bad practice is to wait for something to go wrong before assessing and refurbishing or retiring/replacing the asset. In summary, once business/IT managers realize the value of the portfolios of IT assets that they manage and the interconnectivities of these portfolios, they should focus on the key activities of asset life cycle planning to ensure that maximum benefit (considering value, cost, and risk) is derived from each investment and the portfolios as a whole.

5. **The performance expectations for IT management are intensifying.** The changing political landscape, volatile and unpredictable economic environment, and demands of the public to receive services and transact business with government with the same ease and responsiveness as provided by private industry are

combining to force state IT executives and managers to better perform their roles and responsibilities in fulfilling agency missions, achieving governmental initiatives, and accomplishing political priorities. The standards are being raised for traditional success metrics, such as planning that is visionary and flexible; investments that are aligned with business goals and strategies; projects that meet agreed-upon budgets, schedules, and business results; infrastructure and application assets that are managed through the use of portfolio disciplines and life-cycle concepts for maximizing their cost-effectiveness; service management that is based on process-oriented, customer-focused philosophies; operations that are efficient, available, reliable, secure, recoverable, and protective of the privacy of individuals and the confidentiality of records; and governance that establishes responsibilities for actions and accountability for results through processes that are reliable, predictable, repeatable, and measurable.

In summary, business needs and governmental program requirements should drive the future direction of IT in state government. Expectations for IT leaders have been changing dramatically. Key success factors are moving beyond technology management to enabling organizations to improve the cost performance and value of governmental programs, deliver changes in administrative and service delivery processes, and prepare organizations for adjusting to and prospering in changing political environments and more difficult and unknown economic conditions. To assist governmental entities in becoming better managed and more innovative, IT leaders should assimilate into the world of the business by understanding it, communicating in its language and becoming more devoted to its success.

IT should play significant roles in improving business processes, controlling costs and raising workforce performance. In particular, IT should accelerate and support information flow and create new capabilities for enhancing present services and offering new ones, raising constituent satisfaction, increasing program efficacies, and retaining and boosting public trust and confidence in government. For state government, this implies the astute use of IT to diminish barriers between the providers and beneficiaries of services, including program staff and their clients, and government and citizens regarding their participation in democratic pursuits.

Appendix B – Business-IT Governance Framework

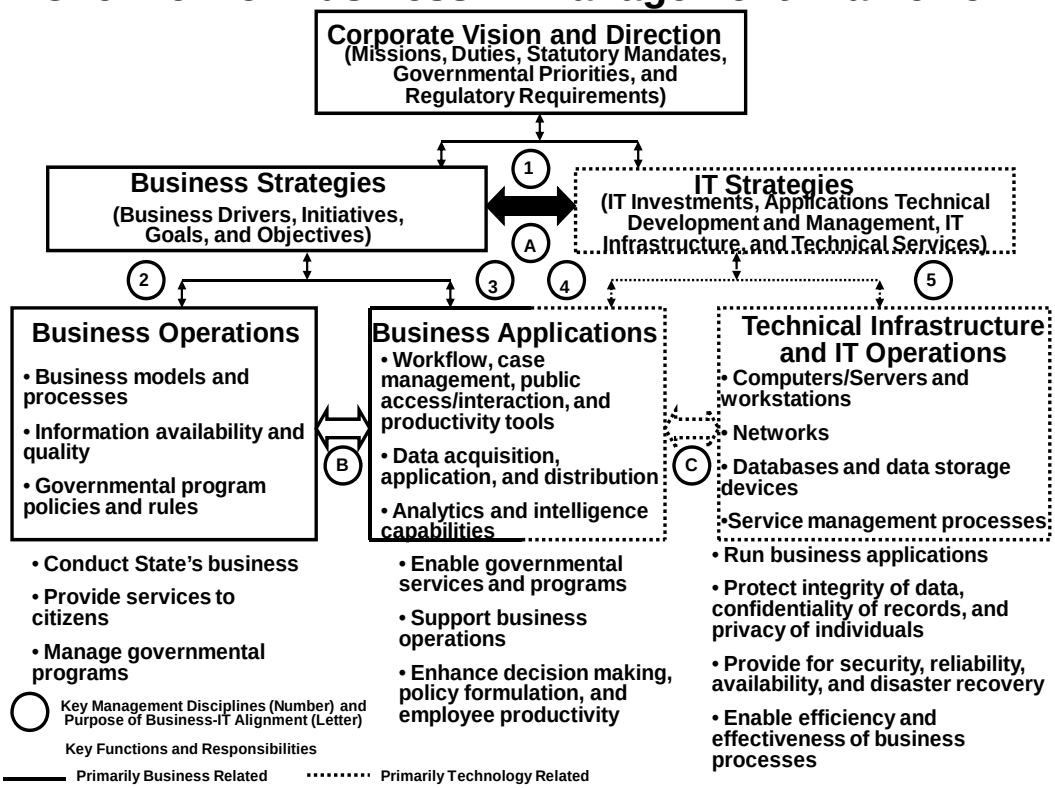
The tumultuous economy is forcing private industry and public organizations to focus on optimizing costs, while simultaneously mitigating risks, improving operations, supporting innovation, and maintaining compliance with statutes and regulations. Business-IT governance is an approach for managing this situation by aligning organizational priorities to business strategies, initiatives, and functions and linking these to IT plans, projects, and operations. The objective is to tie IT investments to business strategies, to obtain the desired value from these projects, and to optimize the use of fiscal, technical, and staff resources. Business-IT governance defines what decisions need to be made, who has the authority to make the decisions, what processes are employed to make the decisions, and who is responsible and accountable for implementing the decisions in a cost-effective fashion.

The description below of the business-IT management framework incorporates the roles of governance and management disciplines involved in the functions and relations of the management of IT from both business and technical perspectives. It highlights the separate and shared responsibilities of business and IT in an overall governance relationship.

Overview of Framework for Business-IT Management

The diagram below depicts the principal components of the business-IT management framework, with cross-references to the major underlying disciplines involved in the successful performance of business-IT management and the main purposes for achieving business-IT coordination and alignment.

Overview of Business-IT Management Framework



The IT disciplines associated with the components of business-IT management framework (numbers) and the most important reasons for business-IT alignment in key areas (letters) are listed below.

1. Business-IT strategy integration and overarching IT management:
    - Business-IT governance disciplines:
        - Investment portfolio management to identify, evaluate, prioritize and select IT capital investments and projects and to allocate budget and resources that correlate IT investments with business directions, initiatives, and priorities. Ranking order may be determined by best fits for enabling governmental priorities, providing citizen service benefits or public value, cost and affordability, and risk of successful completion.
        - Program and project portfolio management to approve planning and implementation projects and monitor and report performance status (effort, time, cost, and quality) over their development life cycles. A program/project management office helps implement IT investments that are within schedule and budget commitments and that provide expected business benefits and value.
    - Overarching IT management disciplines:
        - Financial management, including anticipation of fiscal requirements, budget preparation and monitoring, fiscal analysis and spending control.
        - Purchasing and vendor management, including sourcing strategy and contract, engagement and vendor performance management.

        - Human relations, including the management of personnel regarding numbers of staff, recruitment, competencies and skills, training and development, retention and succession planning, productivity and performance, and sourcing strategy.
2. Business architecture management:
    - Models and analyses of business processes and ties to business strategies, including the modeling and analysis of business processes, interactions among processes, and correlations with business drivers and strategies.
    - Information management, including identification and inventory of key types of information and their links to related business processes.
3. Business application management:
    - Business-IT governance discipline:
        - Applications portfolio management to manage the life cycle of operational applications by planning their near- and long-term dispositions based on periodic evaluations of business value, costs, status of technical components, operational performance, and business and technical risks. The intent is to transition to and maintain a portfolio of applications that is business-responsive, technically manageable, financially sustainable, and risk-acceptable. Applications should be maintained and enhanced as needed to meet business demands, and they should be technically renovated (modernized) or retired/replaced when they are no longer cost-effective, business-acceptable, technically supportable, or risk-tolerable.
    - Business management discipline:
        - Data models and data governance and management, including inventories of key data items, responsibilities for ownership/stewardship, definitions, and how gathered, stored, applied, and shared.
4. Technical application development and maintenance management:
    - Software development processes, including methodologies followed, tools employed, and standards adhered to.
    - Applications technical architecture and applications design engineering, including models and standards for the design of applications to satisfy business needs (such as usability and data availability, quality, and exchange) while involving technologies and designs for secure and reliable performance, scalability for accepting new users or greater volumes of activity, flexibility for modifications to meet new business demands, extensibility for fitting in new technologies or different technical components, and recoverability for responding to human-induced or natural disasters.
5. Technical infrastructure and operations management:
    - Service management, including service desk, security, disaster recovery, and processes (e.g., incident, problem, change, release, capacity, and configuration management) for providing IT operations at affordable costs that satisfy business performance expectations documented in service level agreements.
    - Engineering services for purchasing, designing, implementing, integrating, and managing technical infrastructure hardware, software, storage, and network components.

- IT asset management for inventorying and performing the life-cycle management of IT technical assets (hardware and software) to appropriately balance value, costs, and risks over useful lives while maintaining an IT infrastructure that maximizes service levels, within budget constraints and risk profiles.

A. Business and IT Strategy - Ensure that business and IT strategies are congruent, so that: 1) IT is advising business on the ways technology (legacy and new) can assist the business in accomplishing its strategies; and 2) IT plans, investments/projects, technical infrastructure, and fiscal and personnel resource commitments are matched directly to business initiatives, goals and objectives—two-way communication and linkage at the strategic level. The business strategy setting and IT planning processes, with the tying of IT plans and projects to business strategies and initiatives, are essential elements of this mutually reinforcing relationship.
B. Application Development and Management - Ensure that applications are responsive to present and envisaged future business requirements in terms of business functions and capabilities, volumes of activity/transactions, interfacing among applications (data sharing), and usability. Applications should assist in streamlining end-to-end business processes, enhancing employee productivity and process efficiency, ensuring the integrity and security of business transactions, achieving the desired governmental program results/outcomes, and supporting the continuity of governmental operations.
C. IT Infrastructure and Service Delivery - Ensure that IT infrastructures meet business and technical requirements of business applications, including data volumes and distribution among applications, processing volumes, operational performance expectations, security, and disaster recovery. Management of the technical infrastructure should balance the needs for myriad new and different technical components to meet unique requirements of individual applications with the desire to employ common hardware, software, storage, and network configurations and enforce equipment and operating standards in order to maximize the cost-effectiveness of the infrastructure.

Appendix C – Competencies for Assessing Value and Use of IT to Meet Business Needs

Below are some competencies that may be helpful in assessing the value and use of IT to meet the business needs of agencies and governmental programs. Note that they are primarily business oriented—not technology related. These competencies include awareness and understanding of:

- principles and concepts of investment management, especially for evaluating and selecting and prioritizing investment opportunities, including related governance processes and criteria-based (such as cost, value, and risk) investment analysis.

- processes and practices to develop business strategies and initiatives for meeting organizational visions and missions and for achieving related business goals and objectives.

- business models and the organizational structures, business processes, and staffing skills that are congruent with them and critical to their success and sustainability.

- the use, management, and governance of information for accomplishing business processes and performing governmental program activities.

- the confluence and interaction of workflows, people, and technology (applications) to meet business needs and deliver products and services.

- the uses of technology to meet business needs by innovating and improving the delivery of services; simplifying and enhancing interactions with the public (especially for conducting business with government entities); streamlining and improving business processes for realizing internal efficiencies, improving the effectiveness of operations, and enhancing the productivity of personnel; and contributing to the better morale of employees.

Appendix D – Inventory of Major In-Process Projects

This appendix summarizes the major projects (those over $500,000 total costs) being inventoried in the project portfolio management tool and monitored by the statewide enterprise portfolio management office (EPMO), as part of the State CIO's project approval, monitoring, and reporting process. The data is as of December 31, 2008.

Major IT Projects

(as of 01/16/09)

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Commerce, Department of	Industrial Commission Electronic Document Management System (EDMS) Replacement Project	$4,058,856	$4,058,856	02/25/2009	The agency has an overall need to provide business processes and an integrated automated solution to facilitate the Commission's ability to maintain the State's Workers Compensation program.
Commerce, Department of	Buildings & Sites Redesign	$1,681,330	$1,681,330	07/01/2009	Nearly a decade ago, the NC Department of Commerce, in collaboration with many members of the state's economic development community, developed and implemented NC SiteSearch (www.ncsitesearch.com). At that time, this web-based system employed cutting edge technology and was a landmark effort in providing building and site data online, worldwide 24/7. Since the implementation of NC SiteSearch, numerous technological advances have taken place and the standard for providing building and site information has risen considerably, as has the demand for such data. Conversely there have been no significant enhancements to the NC SiteSearch system since its inception.
Controller, Office of the State	BEACON-HR/PAYROLL	$126,073,680	$144,677,664	06/30/2009	1) Create a more seamless HR/Payroll experience for employees 2) Provide an environment for employees to make informed decisions about their careers and employment benefits 3) Streamline business processes to drive efficiency 4) Increase productivity making the State of North Carolina more competitive 5) Develop a single repository of HR and payroll data with a common set of data elements, to successfully support the State's reporting and management activities 6) Move transactions closer to the point of origin (Employee Self Service/Manager Self Service) 7) Provide a flexible, scalable and easily adaptable system able to respond to changing HR/Payroll needs 8) Eliminate redundant systems and duplicative processing 9) Provide real time access to HR and payroll transaction activity
Controller, Office of the State	BEACON Data Integration	$9,595,451	$7,500,000	08/31/2009	1. To fulfill requirements stated in HB 1473, SECTION 6.8.(a) for the Office of the State Controller, in cooperation with the State Chief Information Officer, to develop a Strategic Implementation Plan for the integration of databases and the sharing of information among State agencies and programs.
Controller, Office of the State	BEACON Budgeting and Financials Procurement Project	$1,500,000	$1,500,000	12/01/2011	In 2003, the Statewide Business Infrastructure Study developed an overall vision for a new state infrastructure. Through that study, business goals for a new budgeting and financial system were identified.
Correction, Department of	DOC Next Generation of OPUS Architecture and Intake Process	$1,463,091	$1,463,091	06/30/2009	To improve efficiency of data gathering by using a business work flow driven architecture, resulting in faster and more accurate identification of offenders, increased safety for the public, DOC staff, and other offenders and an improved ability to better identify initiatives and treatments needed to rehabilitate these offenders.
Correction, Department of	DOC Pharmacy Management System	$3,014,779	$3,041,871	06/30/2009	DOC has two prison hospitals and one prison infirmary that supports approximately 38,000 inmates. Currently, we dispense around 4,500 prescriptions a weekday and 1,000 prescriptions each weekend day. We need a pharmacy management system that can support current technologies, like robotic dispensing machines, and is better positioned to take advantage of the industry's direction towards e-medicine.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Correction, Department of	DOC DCC Electronic Monitoring	$9,491,891	$9,491,891	07/15/2009	DCC is looking to consolidate contracts for electronic monitoring as other states have already done.
Crime Control and Public Safety, Department of	VIPER Strategic Solution Implementation Project - Phase 1	$55,756,325	$55,816,261	04/24/2009	The Voice Interoperability Plan for Emergency Responders (VIPER) is a phased solution to the lack of interoperable communication among public safety officials in North Carolina. The first phase is an immediate, short term solution that is referred to as the Tactical Solution and the second is a long term, Strategic Solution. The Strategic Solution represents a continuation of equipment installation identical to the nineteen (19) 800 MHz sites already installed across North Carolina.
Crime Control and Public Safety, Department of	Flood Inundation Mapping and Alert Network (FIMAN) - (West)	$4,568,343	$4,568,343	04/30/2009	Gather rain and stream gage data and information Spatially depict (map) current and forecasted inundation, and Efficiently and effectively alert emergency managers, public safety and first responders regarding current or imminent flooding.
Employment Security Commission	UI Fraud & Identity Theft Detection - BARTS	$1,881,380	$1,787,949	04/30/2009	In June 2005, the Employment and Training Administration (ETA) of USDOL provided grant funds to the Employment Security Commission (ESC) of North Carolina, for use in addressing the growing problem of identity theft and in detecting and recovering UI overpayments. Through this funding, ESC seeks to identify and procure commercially available software and to customize such software for the following specific business objectives: Improve fraud & identity theft prevention and establish a Case Management System for Benefit Payment Control (BPC-CMS).
Employment Security Commission	Initial Claims Call Center	$11,653,271	$14,139,607	05/29/2009	The TICS scope is to provide an automated UI initial claims system which will enable a claimant to file a claim for benefits utilizing a telephone thereby eliminating the need for claimants to visit the local office. ESC recognizes that some of the customer calls will require CSR intervention. Therefore, the scope includes the simultaneous transfer of telephone call and data collected by the automated system to a CSR in the existing Remote Services Center.
Employment Security Commission	UI Fraud & Identity Theft Detection - RECOVER	$2,014,867	$1,836,122	05/29/2009	In June 2005, the Employment and Training Administration (ETA) of USDOL provided grant funds to the Employment Security Commission (ESC) of North Carolina, for use in addressing the growing problem of identity theft and in detecting and recovering UI overpayments. Through this funding, ESC seeks to identify and procure commercially available software and to customize such software for the following specific business objectives: Improve fraud & identity theft prevention and establish a Case Management System for Benefit Payment Control (BPC-CMS).
Environment and Natural Resources, Department of	EEP Information Management System	$1,717,659	$2,156,363	01/31/2009	The Ecosystem Enhancement Program (EEP) is developing an information system to facilitate procedures for collecting information and data, processing information, making programming decisions, implementing decision making and reporting on its activities. EEP is responsible for watershed planning and implementation of stream, wetland, buffer, and nutrient offset mitigation projects that improve the health of North Carolina watersheds while offsetting impacts from construction projects initiated by the North Carolina Department of Transportation (NCDOT) and other entities.
Environment and Natural Resources, Department of	DPR Central Reservation System	$2,159,486	$2,165,722	02/28/2010	The North Carolina Division of Parks & Recreation is planning to streamline the its reservation process while bolstering the overall efficiency, reliability, and operation of the entire system.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Environment and Natural Resources, Department of	Aquariums Salefish	$1,545,756	$1,545,756	05/03/2010	Speed the ticket selling process Automate the reconciliation of Ticket Sales and Payments Facilitate the customer self sufficiency in registering for events (Web) Automate the scheduling of Aquarium resources for events (Web, Real Time) Collect and analyze demographic data to improve marketing effectiveness Reduce the training required for cashiers Reduce labor expended on manual tasks and reduce the potential for errors introduced by manual processes
Health and Human Services, Department of	NC FAST Automated Interview Software Selection	$831,605	$831,605	01/12/2009	The NC FAST Automated Interview Software Selection Project will refine the contents of the Request For Proposal (RFP) for a Case Management (CM) software solution and the Proposal Evaluation Plan (PEP) to accompany the RFP. This project will finalize and deliver the RFP and PEP for the procurement of a CM software solution.
Health and Human Services, Department of	Crossroads State Agency Model Planning Project (SAM)	$523,160	$794,414	01/31/2009	The business goals include the concept of maximizing new technologies to improve functionality and services to our clients, local, state and federal WIC staff and our vendor community. The project will support the local WIC with business in a user friendly way. Additionally, the system will provide the state and federal staff with metrics and data to support the WIC program.
Health and Human Services, Department of	NC FAST Automated Interview (AI) Integrator Selection Project	$3,520,079	$3,783,981	02/26/2010	The NC FAST Automated Interview Integrator Selection project will develop the Request For Proposal (RFP) for a Vendor to integrate functionality for a case management (CM) software solution to address the business need for an automated interview solution and the Proposal Evaluation Plan (PEP) Document to accompany the RFP.
Health and Human Services, Department of	Replacement MMIS Procurement Project	$2,698,855	$2,782,560	03/31/2009	The intent of the NCMMIS+ Program, under which the Replacement MMIS Procurement Project falls, is to identify and execute the procurement and implementation of the replacement MMIS legacy systems and Fiscal Agent and associated business services, while maximizing efficiencies and improving healthcare services.
Health and Human Services, Department of	HEARTS Hardware Upgrade	$612,356	$612,356	04/01/2009	The business goals for this project are: (1) to create stable, reliable, and scalable production, test and development environments and to provide a solution to meet DMH/DD/SAS' expectations for limited down time, (2) to provide a failover/standby system for the Affinity application and data to insure the system's operation, and (3) to enable HEARTS to continue to grow in terms of data retention. Storage of additional data for billing purposes is needed to accomodate increased growth rate.
Health and Human Services, Department of	DMH - HEARTS upgrades - Precise ID	$1,402,739	$1,402,739	05/01/2009	DMH/DD/SAS has established that the Affinity CMPI will be the master patient index for all DMH/DD/SAS business and clinical systems. Incorrect identification in Affinity will result in the clinician not having access to the patient's clinical record. This directly impacts clinical care and creates a tremendous safety risk. In addition, improvement in patient identification will help to improve the State's compliance with the 'one patient, one record' requirement from the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) and other regulatory standards.
Health and Human Services, Department of	Martin County Call Center Upgrade	$4,322,518	$4,343,987	06/30/2008	The business goals of the project are: (1) Ensure reliable service to NC residents requiring necessary Child Suport Enforcement and Food Stamps Electronic Benefits Transfer services handled through the Martin County Call Center, which currently handles more then 9,570,000 calls per year. (2) Provide the Call Center with equipment that is supportable by outside resources. (3) Make maintenance available at a reasonable cost with newer technology. (4) Install an expandable solution that will meet projected call volume to be handled by the Call Center. (5) Replace current components already past end-of-life. (6) Replace current technology forecasted to be unsupportable beyond October 2008. (7) Provide a system from which data can be extracted and analyzed to improve the services provided through the Call Center.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Health and Human Services, Department of	NC Electronic Disease Surveillance System (NC EDSS)	$7,621,384	$8,246,904	06/30/2009	NC EDSS is a project that promotes the use of data and information system standards to advance the development of efficient, integrated, and interoperable surveillance systems at federal, state and local levels. It is a major component of the Public Health Information Network (PHIN). One purpose of this project is to detect outbreaks rapidly and to monitor the health of the citizens of North Carolina.
Health and Human Services, Department of	Vital Records and Statistics Automation System	$2,387,533	$4,326,209	06/30/2010	North Carolina Vital Records is fortunate to be able to take advantage of recent lessons learned by a number of other states (South Carolina, Texas, etc.) who have begun and have completed the implementation of new, vendor provided (COTS), automation systems. A number of these states resemble North Carolina with regard to their volume of vital records registrations, as well as similarities in population size, rural population, and the number of local partners. Through the selection and implementation of an automated, comprehensive, integrated, customizable, Vendor provided COTS product, Vital Records seeks a comprehensive system that provides a means to handle birth events now with a seamless integrated means of adding all other vital events (death, marriage, and divorce) in the future.
Health and Human Services, Department of	NCMMIS+ Program – DHSR Business Process Automation System (BPAS) Project	$8,496,738	$8,496,738	06/30/2011	The goal of the DHSR BPAS Project is to acquire, implement and operate an IT solution that will support the DHSR business functions as well as critical processes within several business areas of the Replacement MMIS (e.g., Provider Enrollment, Credentialing, and Claims Payment). A predecessor of the DHSR BPAS Project, the DHSR Business Process Automation Project (BPAP) business initiative developed an abbreviated integrated process and data model across six of the DHSR Sections. This BPAS Project also will complete these initiatives.
Health and Human Services, Department of	NCMMIS+ Program-Level Project	$5,345,331	$11,151,565	08/31/2012	The Business goals are to: Satisfy the current business needs of the Department; Satisfy CMS requirements; Align with the State Technical Architecture (STA) and the Statewide Security Infrastructure; Be implemented in accordance with the State's Quality Assurance standards, IEEE Software Life Cycle Processes and the State CIO Project Portfolio Management Workflow Process SB 991; Position the Department favorably for MITA alignment and future growth; and Have credibility with all stakeholders.
Health and Human Services, Department of	DHHS Security Project	$9,118,282	$9,118,282	09/30/2008	NC DHHS entities covered by the Health Insurance Portability and Accountability Act (HIPAA) must be in compliance with the HIPAA Security Rule. The primary goal of the project is to demonstrate due diligence toward complying with federal, state, and Department standards for information security in all four areas of interest as soon as possible.
Health and Human Services, Department of	Health Information System	$40,733,802	$42,021,855	09/30/2009	The goal of this project is to deliver a comprehensive, seamless, fully integrated automated health information system comprised of existing, proven solutions that are built on the public health model and that will support the current and future automation needs of DPH with minimal customization.
Health and Human Services, Department of	Division of Medical Assistance - Uniform Screening Program	$8,128,153	$8,128,153	09/30/2009	The Uniform Screening Program (USP) will provide a more effective way to set screening standards, identify the training needs of screeners, address quality assurance and utilization review issues, and provide required management information reports.
Health and Human Services, Department of	NC FAST Case Management Software Installation Project	$12,537,123	$12,537,123	09/30/2009	This Project is to purchase the software selected under the NC FAST Automated Interview Software Selection Project, to establish the Development (sandbox) environment, and to train the State NC FAST Team on the software (framework) selected. The case management software is a framework that offers a consolidated and integrated service-delivery solution, which will provide a horizontal view across the nine NC DHHS program areas specified, and address all their required functionality.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Health and Human Services, Department of	DHHS HIPAA National Provider Identifier (NPI) Initiative	$10,511,111	$11,142,491	11/28/2008	• DHHS covered entities must be in compliance with the HIPAA NPI regulations no later than May 23, 2007, or contingency plans must be documented showing due diligent effort toward compliance by no later than May 23, 2008. • DHHS will continue to process covered health care providers claim payments while remaining compliant with HIPAA NPI regulations. This will enable NC residents to receive services without interruption.
Health and Human Services, Department of	Replacement MMIS DDI Project	$92,704,823	$92,704,823	11/30/2011	The intent of the Replacement MMIS DDI Project, which falls under the NCMMIS+ Program, is to execute the awarded contract to affect the design, development and installation of the Replacement MMIS, Fiscal Agent operations and associated business services, while maximizing efficiencies and improving healthcare services.
Health and Human Services, Department of	LIMS - Laboratory Information Management System	$4,091,097	$4,173,597	12/31/2008	In a letter dated December 12, 2003, from the Federal Department of Health and Human Services, Centers for Disease Control & Prevention (CDC); Office of Terrorism Preparedness and Emergency Response, our State Laboratory of Public Health (NCSLPH) was strongly encouraged to consider acquisition of a Public Helath Information Network (PHIN) compliant Laboratory Information Management System (LIMS). The primary business goal of this project is to acquire a Commercial off-the-shelf (COTS) or Government off-the-shelf (GOTS) LIMS solution that meets the needs for state laboratory testing, resolves the current business issues experienced by the NCSLPH, and satisfies both State and Federal guidelines and standards. A new LIMS will provide a secure and stable business and technical structure for state laboratory operations and will provide a platform upon which this critical State service can respond to future and emergent needs. The American Public Health Laboratory Association developed a 16-point business plan for improvements within the public health laboratory environment
Health and Human Services, Department of	NCMMIS+ Program - Business Rules and Analysis Project	$1,595,838	$2,028,035	12/31/2008	The business goal of the project is to make detailed business rules available for Benefit Plans, Edits and Audits, and Pricing in a format that would make it easier to understand and help towards implementation by a vendor(s).
Health and Human Services, Department of	DMH - HEARTS Upgrades - Quantim (HIM) Suite	$10,724,832	$10,724,832	12/31/2012	Requirements definition and potential solution analysis of needs for the facilities were done as part of the old CCCMS project. This project is to procure and implement the solution chosen. The goal of this project is to acquire and implement the QuadraMed HIM suite at all facilities in order to begin to meet our overall business requirements and integration needs for IPF-PPS and electronic health record functionality for SOS facilities. This implementation seeks to deliver a complete installation, configuration and training.
Information Technology Services, Office of	NCID Next Generation Upgrade	$8,052,414	$8,052,414	01/31/2010	Improve the stablity, availablity and scalabity of the identity management system for use by Agencies, ITS, NC Business Customers, Local Government Customers, and Citizens.
Information Technology Services, Office of	911 Project	$712,461	$824,131	02/06/2009	Just as the business issues are limited, so are the business goals of this project. The findings of the plan would be the framework for an implementation process that would define any business goals at that point.
Information Technology Services, Office of	OEP Culminating Phases	$5,270,551	$5,062,277	03/27/2009	The ITS Operational Excellence Program will implement operational processes designed to measurably improve the efficiency and effectiveness of IT infrastructure service delivery. The program seeks to establish the Office of Information Technology Services as the State's center of excellence for IT Service Management by creating the kind of operational transparency that shifts ITS' organizational focus from technology to customers.
Information Technology Services, Office of	DNS Replacement	$1,202,511	$1,202,511	04/03/2009	The goal of this project is to generate a Request for Proposals (RFP) that results in a contract award to acquire software or a combination of hardware and software to replace the existing Domain Name System (DNS) with a new application that supports both Dynamic Host Configuration Protocol (DHCP) and Dynamic Domain Name System (DDNS).

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Information Technology Services, Office of	Phase 2 ITAM	$922,376	$954,161	04/20/2009	Ratified Senate Bill 991 (SB 991) of July 2004 gave the State CIO extensive statewide powers and duties and accountabilities for the better planning, budgeting, and management of IT in state government. Combined with previous legislation, SB 991 identifies state IT goals. ITAM is an absolute essential requirement for the accomplishment of these goals.
Information Technology Services, Office of	Office Printer Copier Device Management	$800,000	$861,850	04/30/2009	Improve the management and reduce the costs of office print and copying equipment, including scanners, faxes, copiers, etc.
Information Technology Services, Office of	Enterprise Monitoring	$7,657,037	$7,657,037	09/04/2009	The purpose of this effort is to develop an enterprise monitoring and reporting strategy that addresses all underlying functional areas that comprise a business service and to deploy a tool suite to support the strategy. This project addresses ITS infrastructure systems monitoring as well as hosted services monitoring.
Information Technology Services, Office of	Voice Mail Replacement	$1,433,451	$1,433,451	10/02/2009	Reduce costs (integration, administration, training...) and increase employee and customer use and satisfaction, reliability and speed of communication
Information Technology Services, Office of	IT Consolidation Phase II - Juvenile Justice	$1,471,003	$1,471,003	11/28/2008	Agencies are spending scarce IT resources on basic functions, such as desktop computers, while agency-specific needs are not addressed. Within agencies, mulitple IT shops perform essentially the same role, sometimes even in the same building. The overarching principle of IT consolidation is simple: agencies should devote more of their efforts to IT needs unique to their agencies, not basic infrastructure. The goal is to better align people, hardware and functions so that state agencies can focus on their core missions, and provide better services to the citizens of North Carolina as efficiently as possible.
Information Technology Services, Office of	Directory Strategy Development	$3,785,470	$4,187,202	12/30/2008	The business goals of this project are to design, document and pilot: 1. An enterprise directory strategy leveraging NCID 2. The design, build and implementation of an enterprise directory strategy for ITS managed services at the Eastern Data Center and Western Data Center and a single pilot agency (afterwards, it will be considered standard operating procedures). 3. A standardized Active Directory implementation for consolidated agencies
Information Technology Services, Office of	IT Consolidation Phase II - Cultural Resources	$2,496,639	$2,496,639	12/31/2008	Agencies are spending scarce IT resources on basic functions, such as desktop computers, while agency-specific needs are not addressed. Within agencies, mulitple IT shops perform essentially the same role, sometimes even in the same building. The overarching principle of IT consolidation is simple: agencies should devote more of their efforts to IT needs unique to their agencies, not basic infrastructure. The goal is to better align people, hardware and functions so that state agencies can focus on their core missions, and provide better services to the citizens of North Carolina as efficiently as possible.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Justice, Department of	SSN Replacement & Database Conversion Project (formerly Training & Standards Conversion ...)	$2,108,349	$2,911,054	03/31/2009	• Remove the Social Security Number as the primary identifier. • Demonstrate "due care" in maintaining compliance to NC State Law 1048 (2004). • Consolidate the databases into a single, unified relational database management system (RDBMS) that is consistent with ITD standards and technology strategies. • Streamline the business processes within each group and division to eliminate redundant and error-prone activities in conjunction with use of new application. NOTE: As of March 2007, the scope has been reduced in half. Criminal Justice Standards and Sheriff Standards groups (e.g. business project owners) will be converted on this project. Private Protective Services (PPS) and Justice Academy groups will be converted on a separate subproject.
Justice, Department of	Creation of Data Center as part of Building Renovation	$2,554,440	$2,554,440	04/30/2007	At a state property level the business goals are based on maximizing the return on investment for the various properties of the Blount Street Project. At an agency level there is an opportunity to enhance some network capabilities and improve the supportability of the DOJ data center.
Justice, Department of	Legal Services Case Management	$3,290,672	$3,290,672	10/30/2009	To improve the efficiency and effectiveness of the business processes to track, manage and report case activities; conduct hearings and investigations; provide advice and counsel to clients; share research and information between divisions, and increase timeliness in responding to clients, consumers and the General Assembly.
North Carolina Community Colleges	Data Connectivity Project (2007-09)	$24,061,078	$24,061,078	01/30/2009	Provide adaquate bandwidth to all NCCCS Institutions. This is only a temporary solution until a permanent solution involving collaboration with the UNC System can be obtained.
North Carolina Community Colleges	Learning Object Repository Infrastructure Project	$3,590,351	$3,088,609	12/31/2008	This project will address the initial software and infrastructure required for the establisment of a LOR.
Public Instruction, Department of	NCWISE Reporting	$3,202,657	$5,420,583	01/31/2009	This project will provide LEAs and charter schools a robust and comprehensive ad hoc reporting solution according to user requirements. The solution should deliver approximately 1100 data fields identified in the Ad Hoc Reporting requirements documents. The exact number of fields may vary due to implementation requirements or extraction streams and project cost considerations.
Public Instruction, Department of	Computerized Instructional Management System (CIMS Pilot)	$562,127	$623,261	02/26/2010	Research has shown a need for a Computerized Instructional Management System containing maximum capacities in the following areas: • Manage and distribute item banks • Online management of regional, state, and local assessments • Provide the capability to import and export data to external systems on a student, at an LEA, state, and school level • Perform basic analysis on student assessment data
Public Instruction, Department of	K-Nect	$1,077,497	$1,077,497	03/31/2009	The State Board of Education received $1,000,000 from QUALCOMM Incorporated for the purposes of studying initiatives to empower underserved communities through the use of third generation wireless technologies ("3G") called Wireless Reach™ ("Wireless Reach") in order to strengthen economic and social development in underserved North Carolina communities with a focus on education, governance, healthcare and public safety. NCSBE will use the Donation for the sole purpose of funding "Project K-Nect," a mobile telephone education enhancement initiative to students in the State of North Carolina.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Public Instruction, Department of	Child Nutrition Direct Certification and Verification	$917,151	$930,407	04/21/2009	Through the implementation of an automated process the following goals will be achieved: 1) Significantly reduce manual matching at the 115 LEAs 2) Improve the quality of the data in the matched information 3) Automate Direct Verification to create a more efficient and accurate verification process 4) Maximize the number of students in the Free and Reduced Meals program 5) Develop an automated web-based application that can be implemented in similar organizations
Public Instruction, Department of	School Connectivity – Establish the K12 Common Network	$56,404,618	$25,153,101	04/30/2009	The goal of the School Connectivity Initiative (SCI) is to connect K12 schools into a statewide education network that ensures consistent broadband connectivity to all schools and classrooms and transfer the cost of network connectivity from the LEA's to the State.
Public Instruction, Department of	NC WISE Wave 3 Deployment	$8,573,970	$8,412,922	06/30/2009	To deploy NC WISE to all remaining LEA and Charter schools in the state. Wave 3 will be the final designation of groupings in the deployment of NC WISE. The deployments will begin in the fall of 2007 and continue through the spring of 2009. It is also the goal of NCDPI to lead the deployment efforts of Wave 3. That is to say, NCDPI resources will do the conversion of the school data, contract for and schedule the training of the LEA personnel on the use of eSIS/NC WISE, and also to correct data issues discovered post-conversion.
Public Instruction, Department of	CECAS Enhancement Phase 3	$1,147,031	$1,147,031	06/30/2009	To enhance the current CECAS product with the required federal mandates and business needs for several enhancement requests.
Public Instruction, Department of	NC WISE 2008 Hardware Upgrade	$12,711,390	$12,711,390	06/30/2009	It is the goal of NC WISE to provide a satisfying experience to our users as they continue to use NC WISE in their day-to-day operations in the LEAs. We desire to secure the added CPU capacity and bandwidth such that each LEA, regardless of size or economic status, will have the same access to the state's implementation of NC WISE for their student's information. We also need additional hardware to maintain adequate training databases so that the approximate 2000+ training workshop attendees will have access to databases that are reflective of their user role: data manager, LEA coordinator, Nurse, Counselor, principal, etc.
Public Instruction, Department of	Grade 7 Online Writing	$3,151,817	$3,153,229	06/30/2009	All students at grades 4 and 7 will participate in the Writing Assessment System Pilot. During the 2008–09 school year, all students at grades 4 and 7 will complete two content specific writing tasks/assignments and two on-demand writing tasks/assignments. Grade 4 students will complete their writing tasks/assignments using paper and pencil with the use of word processing tools as a local or an accessibility option. Schools will store their work in local portfolios. Grade 7 students will participate in the Writing Assessment System Pilot using word processing tools in order to complete their writing tasks/assignments.
Public Instruction, Department of	NC 1:1	$5,557,559	$5,491,742	07/31/2009	1. Provide teacher and principal professional development to help identified districts take advantage of 1:1 computing within their school. This includes providing initial and on-going professional development for teachers and principals. 2. Enable adequate connectivity within the schools as needed. 3. Provide needed support staff in each of the 8 schools to ensure high-quality instruction using the resources provided by external organizations. 4. Provide funding for additional classroom tools at each school to help teachers and administrators provide better instruction to students. 5. Provide advice and guidance with respect to 1:1 policies including, but not limited to, student home use policies and acceptable use policies.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Public Instruction, Department of	School Connectivity - Implement the NCDPI E-Rate Support Service	$1,273,389	$1,373,639	08/30/2009	1. Provide an E-Rate support service by which the state can best leverage third party funding to help subsidize the cost of the network infrastructure necessary for 21st Century education. 2. Provide a support service by which LEAs can best leverage third party funding to help subsidize the cost of the Network and Telecom services that will support its administrative and educational infrastructure. 3. Elimate funds paid by LEAs to third party contractors to file E-Rate documents by providing a DPI-staffed support service. 4. Establish and maintain a state E-Rate clearinghouse of best practices for filing, audits and appeals.
Public Instruction, Department of	CEDARS - Unique Identifier for the Education Community	$2,593,769	$2,873,359	08/31/2009	This first project in the CEDARS Program satisfies the business goal of providing a system to assign state level unique identifiers to both Students and Education Staff within North Carolina.
Public Instruction, Department of	School Connectivity - Implement the NCDPI Network Engineering Support Service	$1,108,471	$1,056,435	08/31/2009	1. Provide a support mechanism by which the LEA will have clearly defined guidance on how to and who to call for assistance with troubleshooting and maintenance issues that may arise on the K12 Education Network. 2. Provide a support mechanism by which LEAs can have access to technical assistance with the planning and implementations of new technologies and network best practices to support its educational network infrastructure.
Public Instruction, Department of	CEDARS - Data Warehouse	$8,529,016	$8,754,747	08/31/2010	The current system is ineffective for a data-driven decision making environment. To empower the administrators with the data they need to impact their work, the information processing framework must be changed to accomplish the following goals. - Reduce Duplication of Data Collection Effort - Reduce IT Costs within DPI by minimizing the level of effort required to produce federal data collections - Improve Information Access - Improve Data Quality and Audit Capability - Deliver data warehouse to enable cross system reporting - Ensure user authentication and authorization through the use of NCID - Ensure Privacy and Confidentiality of Information - Provide the ability to produce the federal EDEN reports - Establish the ability within DPI to support the CEDARS data warehouse.
Public Instruction, Department of	Strategic Planning Project for School Technology (NC 1:1)	$540,679	$540,679	09/01/2009	The goal of the One-to-One Learning Technology Initiative is to enable North Carolina teachers to use 21st century tools and resources to teach 21st century content and skills to 21st century students. The Initiative will help enable every student to graduate from high school prepared for a globally competitive workplace, postsecondary education, informed citizenship, and a successful life in the 21st century. The pilot projects are established to provide laptops to teachers and students, internal (wireless) network connectivity, classroom technology, along with the necessary instructional models and professional development. The strategic planning project will develop a plan and conduct a feasibility study that will document the potential benefits, costs, and implementation strategies of a large scale One-to-One Learning Technology Initiative in North Carolina.
Public Instruction, Department of	Child Nutrition CRE	$374,071	$408,168	11/28/2008	The purpose of the Child Nutrition CRE project is to ensure an automated system of compliance and monitoring reviews of the Federally- funded Child Nutrition Programs administered by NC DPI in a timely, efficient manner using guidelines set forth by the United States Department of Agriculture and the State of North Carolina.
Public Instruction, Department of	AHR State Rollout	$3,048,477	$3,048,477	12/31/2009	This project will provide LEAs and charter schools a robust and comprehensive ad hoc reporting solution according to user requirements. The solution to date has delivered approximately 1100 data fields identified in the Ad Hoc Reporting requirments documents. This project will extend this capability state-wide. The project will also position AHR to replace the Reporting Hub system over time, which contains more than 300 distinct reports, many of which will be replicated in the new reporting system.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Revenue, Department of	Online Filing and Payments Services	$1,305,278	$3,988,740	12/31/2008	The key business objectives listed below are the primary impetus for this project: 1. To develop a reliable, safe, and robust system for accepting electronic returns and payments. 2. To provide taxpayers with the online services they value and desire. 3. To create an online services framework that is user friendly and consistent. 4. To create an online services framework which supports future growth for e_Business initiatives. 5. To develop application architecture of reusable components that will accelerate future development efforts. 6. To ensure that areas that provide help desk or create online transactions on behalf of the taxpayer are sufficiently staffed and trained. 7. To eliminate the need for outsourcing ACH Debit/EFT services to a third party. 8. To provide the EFT ACH Debit taxpayer with comparable or better services as than exists today with govOne to the degree possible. 9. To provide the capability for taxpayers to file and/or payonline for a variety of tax types, view online history, and cancel bank draft transactions that have not been processed. 10. To provide the capability for authorized DOR Employees to do the above.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Revenue, Department of	Tax Information Management System (TIMS)	$67,116,454	$67,116,454	12/31/2011	ITAS currently support 12 tax schedules that account for 95%+ of all taxes deposited by the Department. ITAS allows editing, correcting and posting of tax returns and payments, noticing to taxpayers, business registration, check writing and accounting, accounts receivables reporting, local sales and use tax accounting and distribution, exceptions processing and numerous other functions. In addition to replacing ITAS, the new system will replace other existing systems, such as USUB, JETS, RCA, VISTA, Business Incentives (Wm S Lee) and other smaller MS Access systems. Through a modernized integrated tax system, which will integrate all of the state's tax types, DOR will be able to: Provide taxpayers and agency staff with a complete picture of all of their tax liabilities, allowing the department to provide a higher level of customer service and a more timely and accurate resolution of taxpayer issues and questions. Provide additional automation to recurring manual processes Achieve faster and more accurate processing of all tax returns Achieve more tightly integrated revenue accounting Provide more timely responses to proposed legislative changes
Transportation, Department of	STARS E-Inspection Sticker Project (PROG.0005, ITP.00133, DMV, P2)	$845,545	$845,545	01/31/2009	The goals of this project are to: 1. Identify guidelines for issuing vehicle registration for vehicles subject to safety or emission inspection. 2. Require safety and emissions inspection compliance to perform vehicle registration services. 3. Deny vehicle registration services for subject vehicles that have not passed the safety or emission inspection. 4. Specify the inspection due date on the appropriate vehicle registration documents. 5. Display pertinent information related to safety and emission inspection due dates in the STARS application. 6. Generate and/or revise inspection reports. 7. Disable the Sale of Inspection Stickers application.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Transportation, Department of	DMV Driver License Digital Imagery System Planning Project (PROG.0003, ITP.00044, DMV, P4)	$846,000	$846,000	02/28/2009	This project is the first phase (Phase I) in developing the requirements of a new Driver License Digitized Imagery System. Phase II, to develop the new Driver License System, will be separate from Phase I and NCDOT will submit another project for approal.
Transportation, Department of	HB1779 - Planning to Post Implementation (PROG.0004, ITP.00129, DMV, P1)	$27,769,280	$27,789,146	03/31/2012	The Division of Motor Vehicles – Driver and Vehicle Services Section is the sponsor of the Collect Vehicle Property Tax (HB 1779): Planning to Post-Implementation Project (ITP.00129). This project is one of the projects that constitute the Collect Vehicle Property Tax (HB 1779) Program (PROG.0004) which will enable the collection of vehicle property tax with the issuance and renewal of vehicle registration. This project will facilitate the planning, collection of business requirements, design of an implementation strategy for HB 1779, programming for STARS and the interface applications, testing, implementation, and post-implementation.
Transportation, Department of	Notice, Storage and Theft System (ITP.00062, DMV, P1)	$770,000	$1,017,500	04/30/2009	The clients expectations of the new information computer system are: A uniform business process that enables data to be passed to all interest parties in timely manner, Integrate the data, Automate manual processes, Image documents to eliminate paper files, and Decrease time required to service customers.
Transportation, Department of	Fleet Documentation (ITP.00092, BSIP, P6)	$3,078,139	$3,078,139	04/30/2009	1. Provide online access to equipment service manuals and service bulletins. 2. Provide access to equipment specific manuals including diagnostic, repair (service), specialized, parts catalog and BOM. 3. Provide a two-way cross-reference between VMRS codes and parts. 4. Provide access to standard forms (i.e., inspection) for a piece of equipment. 5. Allow the user to add notes to a specific piece of equipment by VIN or equipment number. 6. Migrate the existing equipment data from FleetCross to the new solution. 7. Provide a process for converting new equipment data from the various formats in which it is received to a format for import and storage in the new system. 8. Provide the necessary equipment to use and maintain the new system (PC's, printers, scanners, etc.) 9. Train Shop and Equipment Unit staff on the new solution.
Transportation, Department of	Point of Sale Application (POS, ITP.00110, BSIP, P1)	$1,708,400	$2,891,400	04/30/2009	The following business goals have been identified by the functional teams: Provide software solution to handle ship store sales. Provide software solution to handle ticket / reservations sales. Ensure PCI compliance to be able to accept credit cards as a type of payment. Provide information to other division offices using BI reporting. Enable DOT to leverage the application development in other areas of the business.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Transportation, Department of	ERP 2005 Upgrade (ITP.00093, CIO, P1)	$6,050,000	$9,550,000	05/31/2009	North Carolina Department of Transportation desires to have the most current version available to support the growth of its mission and provide the ability to support its future business strategy: - Maximize the use of the SAP software as an information system to provide the basis for financial and operational decision support - Minimize the dependence on external resources and become more self sufficient for production support, upgrades, process improvements and expanded functionality - Streamline complex business processes and reduce workarounds where possible by taking advantage of new functionality - Provide the clients with premier customer service and products to support the mission of the Department of Transportation - Maintain infrastructure to accommodate the technical and functional requirements for new releases and ongoing support packages - Reduce complexity, reduce total cost of ownership, reduce on-going maintenance support cost, and increase efficiency. - Utilize NetWeaver as the basis for offering composite applications to reduce cost and effort associated with
Transportation, Department of	DMV Central Issuance Lite (ITP.00152, DMV, P3)	$19,187,588	$19,187,588	06/30/2009	The Major business goals are: 1. Central Print Functionality - Afford DMV the ability to centrally produce and print drivers licenses and IDs in support of state/federal legislative mandates, national security frameworks and international system standards 2. Temporary Drivers License – Valid for 20 days while document and identification verification is conducted. 3. Ability to perform document and identity verification - Facilitate a means for DMV to fulfill background checks and document verification to reduce fraud, terrorist threats, identity theft and repeat offenders 4. Issuance of Drivers Licenses after document and identity verification 5. Ability to monitor central print card production status for customer support purposes - Allow DMV headquarters personnel the ability to monitor centralized card production and intervene accordingly
Transportation, Department of	DMV Call Center Relocation	$524,195	$524,195	09/28/2007	The project includes planning, configuration, and installation of equipment and cables at the Bladen County facilities. The project provides DMV Call Center the support and resources needed to assure continuity of the Call Center's citizen services, business operations and support to other DOT business units. The project includes the involvement of the Office of Information Technology Services (ITS) that will provide resources to define the business needs and implement a telephone system to meet the voice communications requirements at Bladen County Call Center at the temporary location and the new building.. Timely implementation of the entire IT infrastructure, and installation of the telephone system is crucial to this project due to the mandated nature of the move.
Transportation, Department of	DMV Unified Carrier Registration - Phase 2 (PROG.0006, ITP.00150, DMV, P5)	$503,363	$503,363	09/30/2009	he purpose of the project is to support the federal Unified Carrier Registration Agreement by collecting UCR fees for North Carolina carriers. The project will be split into three phases. Phase 1 was implemented on April 19, 2008. Phase 3 will be a web component.
Transportation, Department of	Verizon Safety Automation and Electronic Sticker (e-Sticker) Authorization (ITP.00143, DMV, P2)	$22,752,000	$22,752,000	11/30/2008	The problem of North Carolina manual emission and safety sticker sales and inventory process is the labor-intensive task of maintaining and tracking sticker inventory, the high cost of sticker shipping and handling, and the absence of sticker audit trail. This manual process to purchase and maintain emission and safety stickers affect DMV and inspection station owners, which impacts their daily operations.

Department or Agency	Project Name	Original Budget Cost - Total Investment Cost	Project Revised Budget Total Investment Costs	Project End Date	Business Goals
Transportation, Department of	511 System - Solicit Vendors for Appl Support (ITP.00153, BSIP, P4)	$5,000,160	$5,000,160	12/18/2009	The main goal/objective of the project is to continue to provide the 511 service so that our transportation users have a single point of contact to obtain timely, accurate, and reliable information on NC's transportation systems. This service is a federally supported program that is critical to helping to meet the Federal Highway Administration's (FHWA) mission to provide a single point to obtain travelers information. The 511 system is a multimodal traveler information tool that disseminates information statewide via a telephone line pertaining to anything that impacts travel in North Carolina. The NC 511 system is tightly integrated with the existing methods used for disseminating information today and the information available on 511 is also mirrored on the North Carolina's Intelligent Transportation System webpage, www.ncdot.org/traffictravel.
Transportation, Department of	Digital Mapping Camera System (DMC, ITP.00164, ETS, P1)	$1,995,930	$1,995,930	12/31/2008	The NCDOT Photogrammetry Unit provides digital mapping for transportation planning, design, construction, and maintenance. Also, the unit provides emergency response to assess damages and provide needed data so that transportation facilities and services are restored. To achieve this mission, the unit must operate a piece of survey equipment in the form of an aerial mapping camera system. Due to the eminent end of life of the existing system, this piece of survey equipment must be replaced. The NCDOT Photogrammetry Unit's expectation is to procure a large format digital mapping frame camera and supporting software used to acquire digital aerial photography in support of the production of digital mapping products required by the department.
Transportation, Department of	NCSmartlink (ITP.00066, ETS, P5)	$1,295,038	$1,309,143	12/31/2009	The overall goal is to purchase and implement a product that provides the public with a Single Point of Contact to provide traffic information to the public in a timely manner without accessing multiple sites. The objecive is to provide access to the images of Traffic Camera, Traffic Incident Management System (TIMS) data, Dynamic Message Signs (DMS) data, traffic counter and speed data, Roadside Weather Information Stations (RWIS) data as well as messages available from Highway Advisory Radio (HAR) through one common web site.
Transportation, Department of	HB1779 - Statewide Situs Address / Tax Jurisdiction Database Project (PROG.0004, ITP.00168, DMV, P1)	$2,859,056	$2,859,056	12/31/2011	This project will analyze the current process for NC counties in the assignment of tax codes by situs address to registered vehicles for taxing purposes, gather the requirements to create a Statewide Address/Tax Jursidiction database, design the solution, develop program specifications, and develop the database and associated application (including coding, unit testing, system/integration testing, client testing, volume testing, stress testing, production testing, implementation, and post-implementation) to interface with STARS. This statewide database will be used by STARS to facilitate the calculation of vehicle property taxes for all NC counties.